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**REMARKS**

Applicant has carefully reviewed and considered the Office Action mailed on December 18, 2002, and the references cited therewith.

Claims 1, 3, 4, 6, 21, and 27 are amended; as a result, claims 1-30 are now pending in this application.

**§112 Rejection of the Claims**

Claim 21 was rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Office Action indicates that claim 21 is indefinite because there is no means that perform the function of "copy the generated current."

Claim 21 is amended to remove the term "copy of" for clarity. In view of the amendment, Applicant requests that the rejection of claim 21 be reconsidered and withdrawn.

**Priority date**

Applicant does not admit that the publication of the Wada et al. reference is prior art. However, applicant reserves the right to swear behind the Wada et al. reference because it was published after the filing date of Applicant's application.

**§102 Rejection of the Claims**

Claims 1 and 7-9 were rejected under 35 USC § 102(e) as being anticipated by Wada et al. (US 2002/0036536 A1).

Claim 1 is amended to include elements similar to the elements of allowable claim 21. Thus, claim 1 is now also in condition for allowance. Applicant requests that the rejection of claim 1 be reconsidered and withdrawn and that claim 1 and its dependent claims 7-9 be allowed.

**§103 Rejection of the Claims**

Claim 2 was rejected under 35 USC § 103(a) as being unpatentable Wada et al. (US 2002/0036536 A1) in view of Iizuka (U.S. Patent No. 5,585,751).

Claim 2 depends on claim 1. Since amended claim 1 is in condition for allowance, claim 2 is also in condition for allowance because it depends on claim 1. Applicant requests that the rejection of claim 2 be reconsidered and withdrawn and that claim 2 be allowed.

**Claims 3-5 and 27 were rejected under 35 USC § 103(a) as being unpatentable Wada et al. (US 2002/0036536 A1) in view of Iizuka (U.S. Patent No. 5,585,751) and Shade, Jr. (U.S. Patent No. 4,853,610.)**

Claims 3-5 depend on claim 1. Since amended claim 1 is in condition for allowance, claims 3-5 are also in condition for allowance because they depend on claim 1. Applicant requests that the rejection of claims 3-5 be reconsidered and withdrawn and that claims 3-5 be allowed.

Claim 27 is amended for clarity. Claim 27 recites, among other elements, a control loop circuit to modify a resistance value of the variable resistor in which the control loop circuit comprises a "variable impedance" output driver.

None of the proposed combinations of Wada et al., Iizuka, and Shade, Jr. discloses the control loop circuit comprising a "variable impedance" output driver. Wada et al. and Iizuka do not disclose a control loop circuit comprising a "variable impedance" output driver. Shade, Jr. discloses an operational amplifier connected in a unity gain configuration. While the Office Action points out that the unity gain amplifier of Shade, Jr. is a "variable output driver", that is not the same as the "variable impedance output driver" of claim 27. Thus, the proposed combination described in the Office Action, even if the cited patents could be so combined, does not correspond to the structure of claim 27.

As is a common knowledge, an operational amplifier has a fixed (not variable) output impedance. An operational amplifier connected in a unity gain configuration (as in Shade, Jr.) also has a fixed output impedance. Thus, the unity gain operational amplifier of Shade, Jr. is not a "variable impedance" output driver as claimed in claim 27. Therefore, none of the proposed combinations of Wada et al., Iizuka, and Shade, Jr. discloses a control loop circuit comprising a "variable impedance" output driver, no prima facie case of obviousness, the rejection fails and claim 27 is patentable over Wada et al., Iizuka, and Shade, Jr. Applicant requests that the rejection of claim 27 be reconsidered and withdrawn and that claim 27 be allowed.

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Allowable Subject Matter

**Claims 6 and 28-30 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

Claim 6 is rewritten in independent form. Thus, claim 6 is in condition for allowance.

Claims 28-30 depend on claim 27. In light of the reasons represented above regarding allowability of claim 27 and its depend claims, claims 28-30 are believed in condition for allowance as written.

**Claims 21-26 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

Claim 21, which was not rejected on prior art grounds, is amended for clarity to overcome the 35 USC § 112 rejection and is believed to be allowable as amended. Claims 22-26 depend on claim 21. In view of the amendment to claim 21, claims 21-26 are also in condition for allowance.

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**Claims 10-20 were allowed.**

Applicant acknowledges the allowance of claims 10-20.

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative (612-373-6969) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 11 day of March 2003.

Anne M. Richards

Name



Signature